Office Work Instruction

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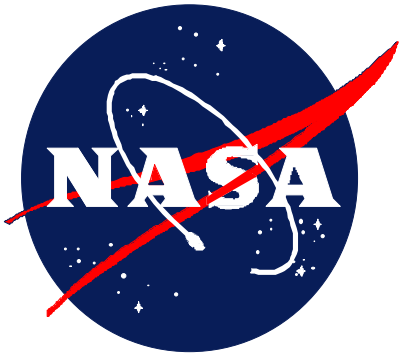
Responsible Office: YF/Program Planning and Development Division

Subject: Conduct Peer Review



OFFICE WORK INSTRUCTION

CONDUCT PEER REVIEW

(Conforming to ISO 9001 Quality System Requirements)

DOCUMENT HISTORY LOG

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PREFACE

The NASA Organizational Work Instruction (OWI) for Conduct Peer Review documents the tasks and activities in conformance with the International Organization for Standardization's (ISO) 9001 requirements for quality systems. The manual supplements the NASA Strategic Plan, Strategic Management Handbook, and other higher level NASA directives, which form the basis for how NASA conducts business.

This OWI is not intended to duplicate or contradict any other NASA policy, procedures or guidelines, which currently exist. As such, the OWI will reference prevailing documents where a topic is addressed and existing coverage is deemed adequate. Additional information provided within is intended to supplement existing documentation regarding Headquarters (HQ) implementation of strategic and program/project management, as well as HQ conformance with the ISO 9001 Quality Management System (QMS) requirements.

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1.0 PURPOSE.

This OWI provides information for the organizational structure, responsibilities, procedures, processes, and resources for conducting peer reviews within the ESE at NASA Headquarters in conformance with ANSI/ASQC Q9001-1994 and NPD 8730.3, *NASA Quality Management System Policy (ISO 9000)*. The OWI describes what is to be accomplished by the process, not how the work is to be performed. It addresses the overall policy, and references other documents which provide implementing guidance.

2.0 SCOPE

2.1 Scope. This work instruction describes procedures for the NASA Earth Science Enterprise (ESE) peer review process. This process includes conducting mail-in reviews and panel reviews.

2.2 Applicability. This work instruction for Conduct Peer Review applies to the NASA Office of Earth Science (OES, Code Y) offices and divisions. The Associate Administrator for Earth Science is responsible for maintaining this document. The controlled version of the manual is available on the World Wide Web (WWW) via the HQ ISO 9000 Document Library for the ISO 9000 QMS at http://hqiso9000.hq.nasa.gov. Any printed version of this OWI is uncontrolled (reference: HCP 1400.1, Document and Data Control). Proposed revisions of this manual will be accomplished by following HOWI 1410-Y15 (Approval of Quality Documents).

3.0 DEFINITIONS

In general, the definitions given in ISO 8402 apply. Appendix B of the *Earth Science Enterprise Management Handbook* provides additional ESE-specific terms and definitions.

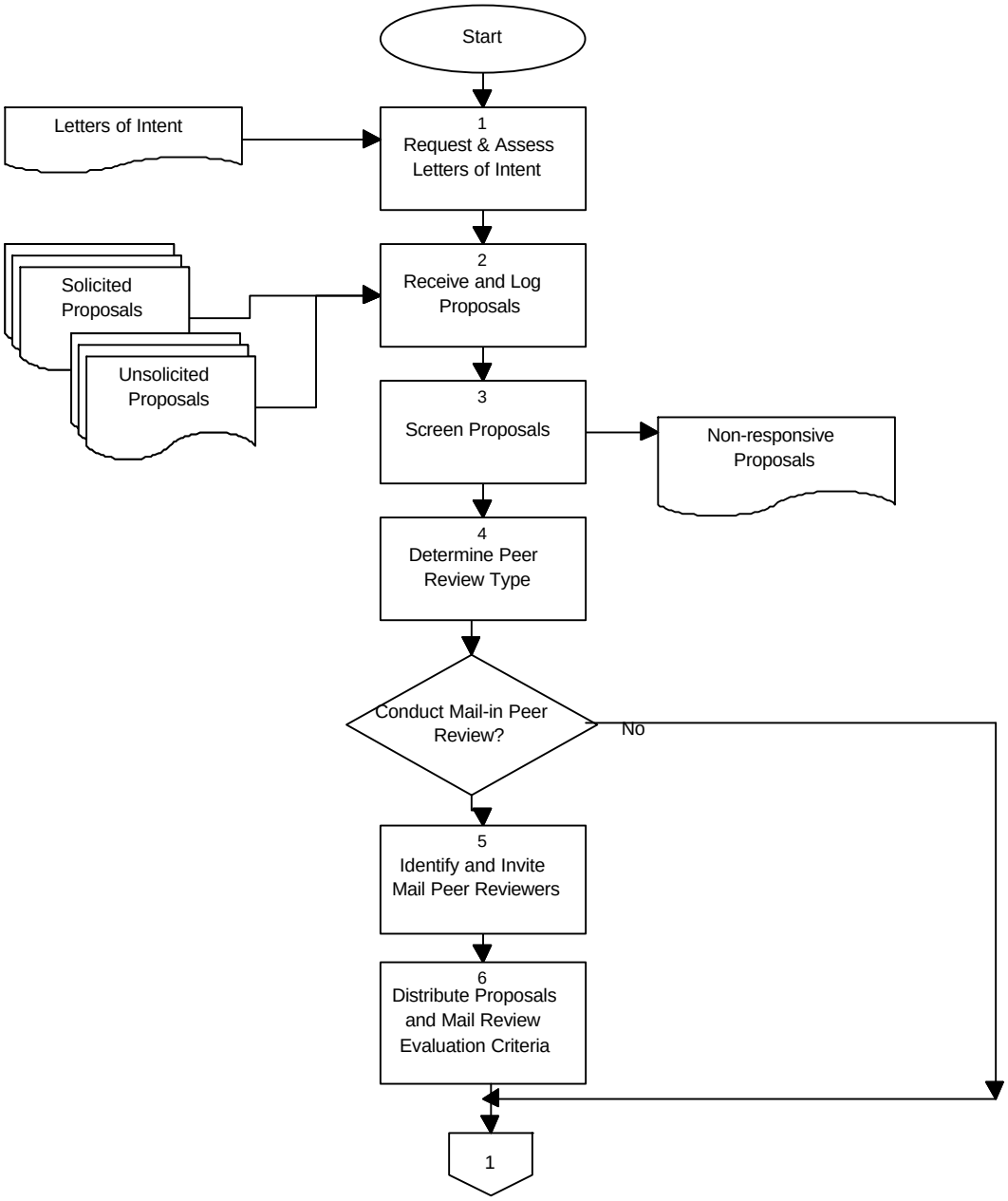
4.0 REFERENCES

THe following documents contain provisions that, through reference in this OWI or in policy or procedure documents, constitute the basis for the documented procedure:

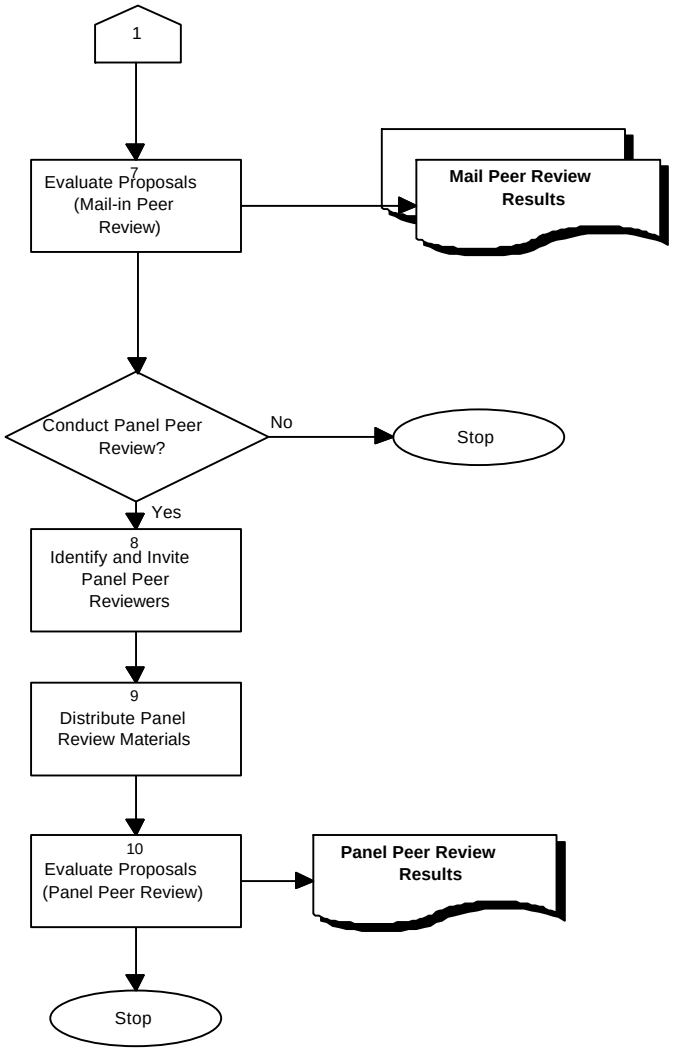
FAR 6.102	Use of competitive procedures
FAR 35.016	Broad agency announcement
NFS 1835.016-70	NASA Research Announcements
NFS 1837.204	Guidelines for determining availability of personnel
NFS 1852.235-72(J)	Instructions for Responding to NASA Research Announcements
NMI 8320.1D	Basic Policy for NASA University Relationships
NPG 5800 Sec A part 1260.11	Grant & Cooperative Agreement Handbook
NFS 1872.705-3	Glossary of Terms & Abbreviations Associated with Investigations
FAR 15.6	Unsolicited Proposals
NFS 1815.6	Unsolicited Proposals
NPD 1000.1	NASA Strategic Plan
NPG 1000.2	NASA Strategic Management Handbook
NPD 7120.4A	Program/Project Management

NPG 7120.5A	NASA Program and Project Management Processes and Requirements
NPG 1441.1C	NASA Record Retention Schedules
ANSI/ASQC Q9001-1994	American National Standard, Quality Systems-Model for Quality Assurance in Design, Development, Production, Installation, and Servicing
ANSI/ASQC 8402:1994	Quality Management and Quality Assurance - Vocabulary
NPD 8730.3	NASA Quality Management System Policy (ISO 9000)
NHB 1101.3	NASA Organization Handbook

5.0 FLOWCHART



5.0 FLOWCHART (CONT)



6.0 PROCESS DESCRIPTION

The ESE uses a peer review process, sometimes also called scientific review, to evaluate both solicited and unsolicited proposals. Peer review is used extensively in NASA science, applications, education, technology (SAET) and appropriate flight mission acquisitions. It is essential for a high quality, relevant program. The use of external peer review enhances the quality of NASA's investigations and activities because it brings the best and most critical national and international experts to the evaluation process. External peer review ensures that fresh viewpoints, alternative perspectives and state-of-the-art understanding are included in the evaluation process. Each review includes a written record of the evaluation and evaluation records are maintained in the cognizant reviewing office. The evaluation results are used to make a judgment about the merits of each proposal and ultimately are used as the basis to make a selection for an award.

The Federal Acquisition Regulations (FAR) 35.016 "Broad agency announcements" dictates that peer review will be the method used to evaluate and select research for funding. This applies to the acquisition of all research investigations in which the applicable type of solicitation is used, for example, a NASA Research Announcement (NRA), an Announcement of Opportunity (AO) or a Cooperative Agreement Notice (CAN). The scientific, data and information systems, and engineering communities are asked regularly to participate in the peer review of proposals submitted for consideration..

Peer review processes are usually described in each NASA solicitation. Although the mechanical details of the review process may vary from program to program, the basic use of discipline experts to evaluate and document their findings is universal across NASA. The sponsoring program office for each solicitation is responsible to implement the peer review and maintain the integrity of the evaluations.

Solicitation initiators from the Research Division (Code YS) , the Program Planning and Development Division (YF), and the Applications and Outreach Division (Code YO) conduct this process regularly. The solicitation initiator is usually a science, applications, or education program manager, or a Program Coordinator but could be a division director, deputy division director or someone such as a discipline scientist who is not a program manager. The Research Opportunity Administrator from the Business Division (Code YB) provides administrative support for the solicitation process.

The process flow diagram of Section 9 depicts typical mail-in and panel peer review processes. Variations on these processes or somewhat different peer review processes may be employed from time to time, as appropriate. The following table describes the process flow diagram of Section 9.

Actionee		**Action**
Support Contractor	1	Request and assess Letters of Intent to Propose (optional). At some reasonable period after the release of the solicitation document a Letter of Intent to Propose may be requested. Though stated as optional in the solicitation document, such a letter is used to ensure early identification of science and technical discipline skills likely required of the peer review team. Such a letter would be submitted after any planned bidder's conference or at some reasonable time after the solicitation has been announced.
Support Contractor	2	Receive and Log Proposals. The ESE support contractor receives and logs both solicited and unsolicited proposals.
Solicitation Initiator or Program Manager	3	Screen Proposals. The solicitation initiator or Program Manager screens the proposals, and rejects any non-responsive proposals.
Solicitation Initiator	4	Determine Peer Review Type. The solicitation initiator, with the

Cognizant Reviewing Division Director

concurrence of the appropriate division director(s) -- for example, the Research Division Director when reviewing proposed science investigations -- determines the characteristics of the peer review process to be used. The characteristics include how the review is to be conducted and the source of peer reviewers. For example, reviews may be conducted by mail-in, by panel, or by some combination or variation of these methods, including single or multi-step proposal review processes. Also, ESE may make full use of external peer reviewers, or conduct an internal peer review -- that is, involving only NASA civil servants. The solicitation initiator bases these decisions on the urgency of the schedule for a selection, the complexity of the proposals to be evaluated, the number of responses, what type of process was advertised in the solicitation and a variety of other considerations.

Usually, ESE evaluates proposals using a mail-in peer review method, a panel peer review method or both, and involves external reviewers from all types of institutions. If both mail-in and panel reviews are to be used, the panel review almost always follows and receives input from the mail-in review.

Situations in which internal peer reviewers alone may be appropriate include proposals that involve minor funding for non-research activities such as workshops or symposia, or research situations requiring a quick response to an unexpected opportunity such as a volcanic eruption or foreign aircraft mission.

Solicitation Initiator

5 Identify Mail-in Peer Reviewers. Mail-in peer review allows for selecting reviewers with the very specialized expertise required for delving deeply into the technical and scientific merits of the solicitation topic and technical approach. The NASA ESE draws its peer reviewers from the entire scientific, technical, educational, information systems, and engineering communities, including experts from both public and private academic institutions, industry, government (such as NASA Centers, other government laboratories, and Federally Funded Research and Development Centers), and foreign countries.

The solicitation initiator identifies potential reviewers based on their experience, knowledge of the SAET technical areas, information systems, and engineering or management areas. In addition recommendations may be obtained from other program managers, acknowledged experts, NASA management, university professors and corporate executives. Criteria considered reflect the reviewers' scientific, technical, and professional expertise, credentials and abilities, and may include quality of scholarly research, relevant publications, amount and relevance of research, knowledge and experience of the discipline. Availability and willingness to accomplish the review are also factors.

NASA and its support contractors maintain a database of discipline experts and this database is drawn upon to find the appropriate reviewers. Additional names are regularly added as new people enter the field. The ability of a potential peer reviewer to conduct an impartial review is a critical factor. The solicitation initiator screens potential reviewers for any perceived or real conflicts of interest. "Conflict of

interest" means that because of other interests, activities or relationships, a person is unable or potentially unable to render impartial assistance or advice to the Government, or the person's objectivity in performing the review is or might be otherwise impaired. Other interests, activities or relationships include financial interests, institutional affiliations, professional biases and associations, as well as familiar relationships. Conflicts could further occur as a result of imbalance between Government and non-Government appointees, a member evaluating a proposal from their own parent organization, or panel members representing a singular school of thought in discipline areas involving competitive theories and approaches without appropriate balance from those representing competitive schools of thought.

The solicitation initiator sets a due date for the mail-in reviews and directs the support contractor to distribute the proposals and evaluation criteria to the mail-in reviewers.

Support Contractor — 6 — Distribute Proposals and Mail-in Review Evaluation Criteria. The support contractor distributes the proposals and evaluation criteria through the mail-in to the peer reviewers. Mail-in reviewers are normally sent the proposals for which their reviews are needed, with a letter requesting their review and asking for immediate return of the proposal(s) if the reviewer cannot comply. Reviewers normally perform the review on a voluntary basis without payment for services.

Mail-in Peer Reviewers — 7 — Evaluate Proposals (Mail-in Peer Review). Mail-in reviewers individually evaluate each proposal according to its own merits and using the evaluation criteria provided by NASA and listed in the solicitation or the NASA Guidelines for Unsolicited Proposals. The mail-in peer reviewers return their reviews and evaluations by mail-in (sometimes FAX and e-mail-in) to the support contractor.

Solicitation Initiator — 8 — Identify and Invite Panel Peer Reviewers. A panel peer review brings together scientific and technical experts that cover an appropriate breadth of professional knowledge and expertise and offer balanced perspectives on the topics to be evaluated. It allows for a thorough discussion of the merits of each proposal and the opportunity to reconcile differing evaluations on the part of individual panelists. If a mail-in review has preceded the panel review, the results of the mail-in review are made available, and the panel will be asked to reconcile differences among the mail-in reviews as well as to put the work proposed into a larger scientific and programmatic context.

The solicitation initiator identifies potential panel peer reviewers in the same way he or she identifies them for mail-in reviews. Refer to Activity 4, Identify Mail-in Peer Reviewers, for a discussion of how peer reviewers are identified, screened, and chosen.

The solicitation initiator usually personally solicits participation in a formally convened panel, or in some cases asks the support contractor to call the selected reviewer on his/her behalf. This invitation is commonly extended by phone and followed by formal letter, but may be extended through a formal letter only. Reviewers normally perform the review

without payment for services. Travel costs for the panel meeting are reimbursed.

The solicitation initiator often will assign a lead reviewer for each proposal from amongst the panelists to summarize the proposed research, the results of the mail-in review (if there was one), and his or her own evaluation as a means of initiating the panel discussion of a proposal.

Support Contractor 9 Distribute Panel Review Materials. The support contractor distributes the proposals, the evaluation criteria and the results of the mail-in review (if one was conducted) to the panel members.

Panel Peer Reviewers
Solicitation Initiator
Support Contractor

10 Evaluate Proposals (Panel Peer Review). The peer review panel meets as a group and discusses the scope, strengths and weaknesses of the various proposals. The proposals are rated in accordance with the evaluation criteria and the panel gives an overall rating (a vote or consensus in most cases). The peer panel may also be asked to recommend aircraft campaign payloads or assemblages of proposals that best meet focused program objectives. The solicitation initiator, often with help from the panelists and/or a recording secretary provided by the ESE support contractor, documents the panel peer review evaluation and results.

The solicitation initiator uses the peer review results in subsequent analysis that leads to a selection recommendation. Generally, the solicitation initiator weighs the results of the mail-in and panel reviews against program requirements, costs, and scientific and technical risk to ensure a focused and well-balanced program, and makes a selection recommendation which is then reviewed by the selecting official (usually the Research Director, Applications and Outreach Director or Program Planning Division Director, and occasionally the ESE Associate Administrator, an SAET program manager, or another Code Y official).

7.0 QUALITY RECORDS

Record	Owner	Location	Media	Retention	Disposition
Mail-in Peer Review Results	Solicitation Initiator	Support contractor	Hardcopy	Retire to Federal Records Center 1 year after completion of grant or contract.	Destroy 6 years after completion.
Panel Peer Review Results	Solicitation Initiator	Support Contractor	Hardcopy	Retire to Federal Records Center 1year after completion of grant or contract.	Destroy 6 years after completion.